Defense Information Infrastructure (DII)

Common Operating Environment (COE)

Installation Procedures (IP)
for the
METOC Channels Database (MDCHNL) Segment
Release 1.1 Series

Revision A

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Prepared for:

Space and Naval Warfare Systems Command
Environmental Systems Program Office
(SPAWAR PMW-185)

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1 SCOPE

1.1 Identification

These Installation Procedures (IP) describe the installation of the METOC Channels Database Segment (MDCHNL) of the METCAST data distribution software, Release 1.1 Series, developed by Fleet Numerical Meteorology and Oceanography Center (FNMOC), Monterey, CA. This software is designed to run under the Defense Information Infrastructure (DII) Common Operating Environment (COE), release 3.1 or higher. The software runs under the following hardware and operating systems:

- Sun Enterprise 450 or higher computer running the Sun Solaris operating system, release 2.5.1 or higher.

- Tactical Advanced Computer, TAC-3 (HP 750/755)/TAC-4 (HP J210), or HP K570 or higher running the HP-UX operating system, release 10.20 or higher.

This document has been developed in accordance with the *DII COE Developer Documentation Requirements, Version 2.0.* Revision A addresses additional questions asked during the installation that were not covered in the original version of this document.

1.2 System Overview

METCAST is a standards-based, request-reply and subscription (channel) system for distributing weather information over the Internet using Hyper-Text Transfer Protocol (HTTP) and Multipurpose Internet Mail Extensions (MIME). The METCAST Server Segment is responsible for processing requests for data from METCAST Clients, interfacing with a database to attempt to satisfy each request, and formatting the retrieved data as specified in the request before returning the data to the client. The METCAST Client comprises a separate segment. The MDCHNL segment provides the Channels database for METCAST Server.

The full METCAST Server installation requires three segments: MDCHNL (the METOC Channels segment), MDMETC (the observation database segment) and MCSRVR (METCAST Server itself**). These segments must be installed in the following order:**

1. MDCHNL
2. MDMETC (**NOTE:** This segment requires a later version of the Informix On-Line Dynamic Server (INFXOL) segment than do MDCHNL and MCSRVR. If INFXOL **1.0.2.0**/Informix On-Line Dynamic Server **7.30** is not present on the system, this segment should not be installed. MCSRVR can still be installed, but will not have access to observations.)
3. MCSRVR (must be installed last, but requires MDMETC only if observations are to be processed).

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2 REFERENCED DOCUMENTS

2.1 Government Documents

DDR-2 23 January 1998	*Defense Information Infrastructure (DII) Common Operating Environment (COE) Developer Documentation Requirements, Version 2.0,* Defense Information Systems Agency, Joint Operability and Engineering Organization
Unnumbered 15 June 1998	*Software Requirements Specification for METCAST,* Space and Naval Warfare Systems Command, Environmental Systems Program Office (SPAWAR PMW-185), San Diego, CA
fnmoc_METCAST_IP_11Series 23 April 1999	*Installation Procedures (IP) for the METCAST Client Segment, release 1.1 Series*
fnmoc_METCAST_UM_1100 23 April 1999	*User Manual (UM) for the METCAST Client Segment, release 1.1*
DII.COE31.HP10.20.CIP	*DII COE V3.1 HP 10.20 Consolidated Installation Procedures*
DII.3010.HP1020.KernelP1.IG-1	*DII COE Kernel 3.0.1.0P1 Patch 1 for HP-UX 10.20 Installation Guide*
DII.3010.HP1020.KernelP2.IG-1	*DII COE Kernel 3.0.1.0P2 Patch 2 for HP-UX 10.20 Installation Guide*
DII.3010.HP1020.KernelP3.IG-1	*DII COE Kernel 3.0.1.0P3 Patch 3 for HP-UX 10.20 Installation Guide*
DII.3010.HP1020.KernelP4.IG-1	*DII COE Kernel 3.0.1.0P4 Patch 4 for HP-UX 10.20 Installation Guide*
CM-400-185-03U 2 April 1997	*Consolidated Installation Guide, Solaris 2.5.1, Version 3.1*
CM-400-06U 2 April 1997	*Errata Sheets for Solaris 2.5.1 Version 3.1*
CM-400-77-03 7 April 1997	*DII COE Kernel v3.0.0.3 Installation Guide for Solaris 2.5.1*

CM-400-77-04 22 July 1997	*DII COE Kernel v3.0.0.3 Kernel Patch 3 Installation Guide for Solaris 2.5.1*
CM-400-77-06 31 July 1997	*DII COE Kernel v3.0.0.3 Kernel Patch 4 Installation Guide for Solaris 2.5.1*
CM-400-77-07	*DII COE Kernel v3.0.0.3 Kernel Patch 5 Installation Guide for Solaris 2.5.1*
CM-400-77-08 27 August 1997	*DII COE Kernel v3.0.0.3P6 Kernel Patch 6 Installation Guide for Solaris 2.5.1*
CM-400-77-12 01 December 1997	*DII COE Kernel v3.0.0.3P8 Kernel Patch 8 Installation Guide for Solaris 2.5.1* (Applicable to Patch 9)
ipd4400magridipTES-10 29 January 1999	*Installation Procedures (IP) for the Grid Field Application Program Interface (API) Segment (MAGRID) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database*
ipd4400mdgridipTES-10 29 January 1999	*Installation Procedures (IP) for the Grid Field Database Segment (MDGRID) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database*
ipd4200malltipTES-10 9 October 1998	*Installation Procedures (IP) for the Latitude-Longitude-Time (LLT) Observations Application Program Interface (API) Segment (MALLT) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database*
ipd4300mdlltipTES-10 9 October 1999	*Installation Procedures (IP) for the Latitude-Longitude-Time (LLT) Observations Database Segment (MDLLT) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database*
ipd4200maimgiptes-10 9 October 1998	*Installation Procedures (IP) for the METOC Imagery Application Program Interface (API) Segment (MAIMG) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database*

ipd4400mdgridipTES-10 9 October 1999	*Installation Procedures (IP) for the METOC Imagery Database Segment (MDIMG) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database*

2.2 Non-Government Documents

None.

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3 SYSTEM ENVIRONMENT

3.1 System Requirements

3.1.1 Hardware Requirements

The METOC Channels segment is hosted on the following hardware:

- Sun Enterprise 450 or higher
- Tactical Advanced Computer, TAC-3 (HP 750/755)/TAC-4 (HP J210), or HP K570 or higher

The following configurations are recommended:

- Sun Enterprise 450: RAM: 128 MB minimum, 192 MB optimum
  Disk Space: 200 GB
- TAC-3/TAC-4: RAM: 128 MB minimum, 192 MB optimum
  Disk Space: 200 GB
  Swap Space: 300 MB

3.1.2 Operating System Requirements

- Sun: Solaris 2.5.1
- HP: HP-UX 10.20

3.1.3 Kernel Requirements

- Solaris 2.5.1: Kernel 3.0.0.3 with patches through P9
- HP-UX 10.20 : Kernel 3.0.1.0 with patches through P4

3.2 System and Site Preparations

3.2.1 System Configuration

The following software must be properly installed prior to loading the MDCHNL segment:

- Appropriate operating system (as described above)
- Appropriate DII COE Kernel (as described above)
- DII COE Informix On-Line Dynamic Server segment (INFXOL), version 1.0.1.1/7.23
- DII COE DBAdm Account Group segment version 1.1.0.0
- DII COE DBAdmR segment version 1.1.0.2

3.2.2 Operating System Preparation

Information needed to prepare the operating system is found in these documents:

HP-UX 10.20:

- DII COE V3.1 HP 10.20 Consolidated Installation Procedures
- DII COE Kernel 3.0.1.0P1 Patch 1 for HP-UX 10.20 Installation Guide
- DII COE Kernel 3.0.1.0P2 Patch 2 for HP-UX 10.20 Installation Guide
- DII COE Kernel 3.0.1.0P3 Patch 3 for HP-UX 10.20 Installation Guide
- DII COE Kernel 3.0.1.0P4 Patch 4 for HP-UX 10.20 Installation Guide

Solaris 2.5.1:

- DII COE Kernel v3.0.0.3 Installation Guide for Solaris 2.5.1
- DII COE Kernel v3.0.0.3 Kernel Patch 3 Installation Guide for Solaris 2.5.1
- DII COE Kernel v3.0.0.3 Kernel Patch 4 Installation Guide for Solaris 2.5.1
- DII COE Kernel v3.0.0.3 Kernel Patch 5 Installation Guide for Solaris 2.5.1
- DII COE Kernel v3.0.0.3P6 Kernel Patch 6 Installation Guide for Solaris 2.5.1
- DII COE Kernel v3.0.0.3P8 Kernel Patch 8 Installation Guide for Solaris 2.5.1 (Applicable to Patch 9)

3.2.3 Preparation of Informix

Prior to installing Obs and Channels databases, the Informix logical logs must be enlarged in order to accommodate the long transactions; otherwise, the programs will crash. With DII, the logical logs reside in the root dbspace. To enlarge the logical logs:

1. Log in as sysadmin.

2. Open an xterm. See Section 5.2 for instructions, if necessary.

3. At the prompt in the xterm, type

   ```
   su - informix <Enter>
   ```

   where <Enter> means the Enter key.

4. Bring the Informix server to the 'single user' mode. At the command prompt, type:

   ```
   onmode –s <Enter>
   ```

   A prompt will tell you that you are about to perform a graceful shutdown and ask if you want to continue. Answer `y <Enter>`.

5. Check which log is the current log which has a C symbol under flag column. Type

   ```
   onstat –l <Enter>
   ```

6. Delete 3 non-current logs, for example: if current log is log #1, we delete Logs 2, 3, and 4, as follows:

   ```
   onparams –d -l 2 <Enter>
   y <Enter> (in response to Do you really want to continue prompt)
   onparams -d -l 3 <Enter>
   y <Enter> (in response to Do you really want to continue prompt)
   onparams -d -l 4 <Enter>
   y <Enter> (in response to Do you really want to continue prompt)
   ```

   (The character after the second - sign is a lowercase L in each of the onparams lines).

7. Create 3 new logs 2, 3, 4 with enlarged pages to 1000 pages.

   ```
   onparams –a –d rootdbs –s 2000 <Enter>     # 2000 means 2000 kbytes.
   onparams –a –d rootdbs –s 2000 <Enter>
   onparams –a –d rootdbs –s 2000 <Enter>
   ```

8. Do a dummy level 0 archive, to make the newly created logs available.

   ```
   ontape –s –L –0 <Enter>
   ```

9. Rotate the current small log to one of the new large logs by repeating the following commands until the C appears next to one of the large logs as shown by the `onstat -l` command.

   ```
   onmode –l <Enter>
   onstat -l <Enter>
   ```

10. Drop the small and non-current logs; in our example, these are #1, #5, #6.

    ```
    onparams –d –l  1 <Enter>
    onparams -d -l  5 <Enter>
    onparams -d -l  6 <Enter>
    ```

11. Create three enlarged logs.

    ```
    onparams –a –d rootdbs –s 2000 <Enter>
    onparams –a –d rootdbs –s 2000 <Enter>
    onparams –a –d rootdbs –s 2000 <Enter>
    ```

12. Do another dummy level 0 archive.

    ```
    ontape -s –L -0 <Enter>
    ```

    Under the column ‘flags’, you should see ‘F’ indicated that logs are free to be used.

13. Bring the Informix server back to multi-user mode by typing

    ```
    onmode –m <Enter>
    ```

Next you must create a temporary dbspace for Informix to use for temporary files. To create a temporary dbspace issue the following commands at the command prompt:

```
su – informix <Enter>
```

`cd /chunk/data_store <Enter>` (depending on your installation, the data_store directory may be in a different location. If the command above fails, you can find the location of the data_store directory by typing `find / -name data_store -print <Enter>`. This command should yield the location of the directory. You can then insert this in place of /chunk/data_store in the command above.)

```
touch tempdbs.idat <Enter>
```

```
chmod 666 tempdbs.idat <Enter>
```

```
onspaces –c –d tempdbs –t –p /chunk/data_store/tempdbs.idat –o 0 –s 128000
<Enter>
```

Modify the *onconfig.coe* file. There should be a line starting with `DBSPACETEMP`. Following `DBSPACETEMP` there needs to be a space and the word `tempdbs`. If this is not there, insert it, so that the line starts like this: `DBSPACETEMP tempdbs`. If there is no line starting with `DBSPACETEMP`, add the line so that it looks as shown above.

Bring the server down by typing: `onmode –k <Enter>`. Informix will inform you that you are about to take the server OFF-LINE and ask if you want to continue. Enter y `<Enter>`. You may then get a prompt telling you that some user threads will be killed and asking if you want to continue. Enter `y <Enter>`.

Bring the server up again by typing: `oninit <Enter>`.

Check if Informix is back on line. When you type `onstat – <Enter>` Informix should respond `OnLine`.

3.2.4 Tape/Disk Preparation

The METCAST Server Channels Database segment software is delivered on 4 mm DAT cartridge for the Sun and HP hardware environments.

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4 INSTALLATION INSTRUCTIONS

Installation on HP-UX and Solaris systems is performed using the DII COE Segment Installer.

4.1 Media Booting Procedures

To prepare a tape for installation:

1. Insert the tape in the DAT drive.
2. Log in as sysadmin.
3. Select the System Administration SEGMENT INSTALLER utility under the **Software** pull-down menu.
4. Select the source and click the **Read Contents** button. The contents of the tape appear in the SELECT SOFTWARE TO INSTALL portion of the SEGMENT INSTALLER window.

4.2 Installation Procedures

(Note: Prior to segment installation, ensure that no existing MDCHNL segment is installed on the target platform. If a **METOC Channels Database Segment** is listed in the CURRENTLY INSTALLED SEGMENTS section of the window, uninstall it using the procedure in Section 4.8.)

To install the METOC Channels Database software:

1. First ensure that the operating system (OS) and Kernel, with all patches, are installed. Instructions for installing the OS, Kernel, and patches are contained in the documentation cited in Section 3.2.2.
2. Ensure that the Informix server is UP. Open an xterm (see Section 5.2) and at the command line type `ps -u informix <Enter>`, where <Enter> means the Enter or Return key. In the listing that appears, look for one or more instances of `oninit`. If they appear, the server is UP. If not, see Section 5.3 for instructions for starting the Informix server (a database administrator must do this). Close the xterm after verifying the server status.
3. Install the MDCHNL segment from the installation tape.
   - Highlight **METOC Channels Database Segment**.
   - Click the **Install** button.
4. The INSTALL STATUS dialog box will appear, which will give software loading status in a % format.
5. As the postinstall portion of the process starts, you will be asked whether you would like to customize the database size. Enter **No**.

6. Next, you will be asked to enter the database size in MB. Enter **128** and click **OK**.
7. You will then be asked to enter the Informix password. Enter it and click the **OK** button to proceed.
8. As the installation proceeds, a dialog will pop up to inform the operator that MDCHNL_DB Table Space creation was successful. Click on the **OK** button to clear this dialog.
9. Next a dialog will pop up to inform the operator that MDCHNL_Blob space creation was successful. Click on the **OK** button to clear this dialog.
10. Once the installation is complete, the SEGMENT INSTALLER window will appear. The **METOC Channels Database Segment** will be displayed in the CURRENTLY INSTALLED SEGMENTS section of the window. In addition, a window will appear with the following message:

    Done. Please login as informix and run the script /h/MDCHNL/install./.create_tables.

11. At the end of the installation, an Update Security Database dialog will open showing changes to the database and asking "Do you wish to delete (or add) these entries from (to) the database?". Answer `n <Enter>` each time this question is asked (the question will be repeated a number of times for different entries).

12. After the installation has completed, open an xterm (see Section 5.2), and enter the commands listed below

    ```
    su - informix <Enter>
    cd /h/MDCHNL/install <Enter>
    ./create_tables <Enter>
    ```

    This creates the database tables. On completion, close the xterm. This completes the installation.

4.3 Installation of Upgrades

Installation of upgrades will generally follow the same procedures listed above.

4.4 Installation Verification

All successfully installed segments are listed in the CURRENTLY INSTALLED SEGMENTS portion of the INSTALLER window on HP-UX and Solaris systems

4.5 Initializing the Software

No initialization is specifically required

4.6 List of Changes and Enhancements

This section is tailored out. This is an initial installation of the METCAST Server segment.

4.7 Important Considerations

This section is tailored out.

4.8 Uninstalling the MDCHNL Segment

To uninstall the MDCHNL segment, you must first drop the database as follows:

1. Log in as sysadmin and open an xterm (see Section 5.2).
2. At the command prompt, enter the following commands:

   ```
   su - informix <Enter>
   cd /h/MDCHNL/install/ <Enter>
   ./dropdatabase <Enter>
   ```

   Where <Enter> stands for the Enter or Return key.
3. When the prompt returns, close the xterm. You may now proceed to use the DII COE Segment Installer to uninstall the segment.

To uninstall the segment using the Segment Installer:

1. Select the System Administration SEGMENT INSTALLER utility under the **Software** pull-down menu.
2. In the CURRENTLY INSTALLED SEGMENTS window, find the **METOC Channels Database Segment** and click on it to highlight it.
3. Click on the **Deinstall** button and follow the prompts to uninstall the segment.

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5 NOTES

5.1 Glossary of Acronyms

COE	Common Operating Environment
DII	Defense Information Infrastructure
FNMOC	Fleet Numerical Meteorology and Oceanography Center
GUI	Graphical User Interface
HTTP	Hyper-Text Transfer Protocol
IP	Installation Procedure
IP	Internet Protocol
METCAST	METOC Broadcast
METOC	Meteorological and Oceanographic
MIME	Multipurpose Internet Mail Extensions
PC	Personal Computer
SRS	Software Requirements Specification
SVD	Software Version Description
T&E	Test and Evaluation
TCP	Transport Control Protocol
UM	User Manual

5.2 Starting an xterm

Several parts of the installation procedures require the operator to start an xterm and enter commands. To open an xterm:

1. Log in as sysadmin.

2. Go to the tool bar at the bottom of the screen and double-click on the file drawer (File Manager) icon to open the File Manager.

3. Double-click on the DII_APPS folder to open it.

4. Double-click on the SA_Default folder to open it.

5. Double-click on the XTerm icon to open the xterm.

6. You can now log in in the xterm.

5.3 Starting the Informix Server

1. Log out and log in as dbadmin.

2. Ensure that the Informix server is running. Click on **Database Control** on the menu bar, then select **Server Control** from the drop-down menu. If the dialog that appears says Informix server is DOWN, click on the Start Server button. This should start the Informix server, and the dialog should say the server is UP. When the server is up, close the dialog.

3. Log out and log in as sysadmin.